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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,668	12/31/2003	Chih-Wei Hung	9133-US-PA-1	1667

31561 7590 05/17/2004

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

EXAMINER

LE, THAO P

ART UNIT PAPER NUMBER

2818

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/707,668

Applicant(s)

HUNG ET AL.

Examiner

Thao P. Le

Art Unit

2818

AW

-- Th MAILING DATE of this communication app ars on the cover sheet with th correspondence address.--

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 10-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-20 is/are rejected.
- 7) ☒ Claim(s) 10, 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This application is a divisional of application serial number 10/065,554 filed 10/30/2002, now U.S. Patent Number 6,730,959.
2. Claims 10-20 are pending in this application.

### *Oath/Declaration*

3. The oath/declaration filed on 12/31/03 is acceptable.

### *Specification*

4. The specification is objected to for the following reasons:

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed (see MPEP § 606.01).

In specification, paragraph 8, "The stacked gate structure 106 is disposed the substrate 100" is an incorrect sentence. It should be changed to ---the stacked gate structure 106 is disposed **on** the substrate 100---

In specification, paragraph 31, the word "sidewll" is misspelled.

In specification, paragraph 31, the reference sign "292" in "A P-type well is located between the deep N-type well region 292 and the stacked gate structure 206" is not associate with the corresponding specification and drawings.

In specification, paragraph 32, the reference sign "240" in "This doped region 209 can prevent a short between the subsequently formed contact 216 and the p-well region 240" is not associate with the corresponding specification and drawings.

In specification, paragraph 32, the word "short" in "This doped region 209 can prevent a short between the subsequently formed contact 216 and the p-well region 240" is unclear. What is short? the distance or circuit?

In specification, paragraph 44, what is "an obtuse angle #"?

In specification, paragraph 44, "Thereafter, the patterned photoresist layer 328 is removed Referring to..." is incorrect. Should it be a comma in between?

Correction for all errors above is required.

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

5. Claim 10 is objected to because of the following informalities:

In claim 10, lines 8 and 24, sidewll is misspelled.

In claim 12, line 1, "a tilt angle" in "wherein a tilt angle for the ion implantation process" should be change to --- the tilt angle ---- because this angle is the same angle that mentioned in the previous claim.

In claim 14, "wherein the dopants of the ion implantation process, the source region and the drain region are the same" is unclear. The language of the claim 14 means that the dopants is the source and drain regions. (The dopants can't be the same as the source region and the drain region). It also means that the source region is the drain region, if so, then why the regions have to be identified as source and drain? (source region and drain region are different).

### **Claim Rejections**

#### ***Claim Rejections - 35 USC § 112***

6. Claims 10 and 14 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention..

Claims 10 and 14 are unclear.

In Claim 10, "wherein the first conductive layer fills a gap between the stacked gate structure" is unclear and confused. Where is the gap between the stacked gate structure? Where is the gap? How the stack gate structure has a gap while there is only one stack gate structure? Preamble of claim 10 includes only one gate stack structure

formed on the second well region, only one source region and one drain region formed on two sides of the stacked gate structure.

In Claim 10, "removing a portion of the first conductive layer to form a first contact on the source region and a second conductive layer on the first conductive type second well region" is unclear. Does it mean that the second conductive layer be removed? How does the second conductive layer be removed while the second conductive layer has not yet been formed else where in claim 10. Does the second conductive be formed on the first conductive type second well region? Then where in the first conductive type second well region that the second conductive is formed on? on the drain region or on the stacked gate structure? The source region is on the side where the substrate is etched down to the first well region to form a trench and the drain region is on the side where the substrate is etched through the junction between the drain region and the second well region. So which conductive layer, first or second, forms the source contact and which conductive layer forms the drain contact? Assume that there are two stacked gate structures, how the first conductive layer formed between the stacked gate structures can electrically connects with the source and the doped region while the source region and the doped region are formed on the other side, not the "gap" side between two gate structures, of the stacked gate structure?

Claim 14, if the applicant means that the dopants use to implant the source and drain regions are the same, then when does the implantation performed on the drain

region? Note that the ion implantation performed on the substrate in claim 1 when the drain region was covered by second photoresist.

7. The remaining claims (11-13, 15-20) are dependent from the above rejected claims and therefore also considered indefinite.

8. When responding to the office action, Applicants' are advice to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

### **Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P. Le whose telephone number is 571-272-1785. The examiner can normally be reached on M-T (7-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2818

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thao P. Le', with a stylized, cursive script.

Thao P. Le  
Examiner  
Art Unit 2818